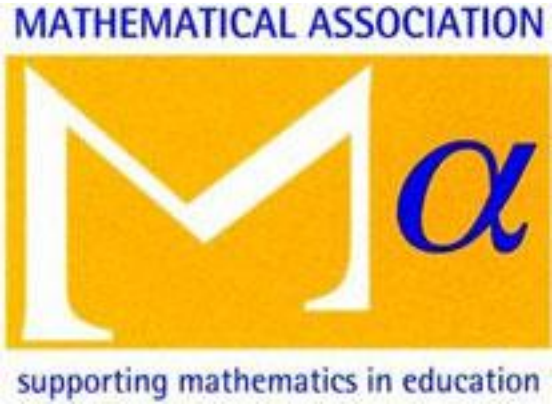

Tables Numériques usuelles. Pp. 51. By L. ZORETTI. 3 frcs. 1917. (Gauthier-Villars.)

Here we have in 45 pages the products of the numbers from 1 to 999 by the numbers 1, 2, 3, . . . 9, and the first four significant figures of the values of n^{-1} and n^2 in each case, with the four first decimals of $\log n$. The next tables give the values of the sine, cosine, tangent and cotangent for 0° 15′, 0° 30′, 0° 45′ . . . to 44° 30′, 44° 45′, and 45°, with their values in grades to the nearest half centigrade, and in radians to the nearest three or four places. Finally, we have the values from $d=1$ to $d=100$ of πd and πd^2. Thumb slips are provided to facilitate ready reference.

Short Logarithmic and other Tables. By W. CAWTHORNE UNWIN. Pp. 43. 1s. 6d. net. Spon. 1917. (Messrs. Spon.)

The tables include: Five Figure Logarithms; Antilogarithms; Natural and Logarithmic Trigonometric Functions; Functions of Numbers; Products of Numbers; Conversion Tables for English and Metric Weights and Measures; and Tables of Weights of Materials. They are intended to "facilitate Arithmetical Calculation in those cases in which great accuracy is not unnecessary." The compiler reminds us that "in many Engineering calculations an error of one per cent. is negligible. The weight of a cubic foot of wrought iron may vary at least three per cent. in different samples, yet it is not necessary to experiment on the specific gravity of the material before estimating the weight of a bridge. The tenacity of iron is not always known with a certainty which excludes an error of one ton in twenty, or five per cent. In Hydraulic calculations, it must frequently be impossible to assign the true value of the coefficients within ten per cent. . . . In such cases it is a waste of labour to carry the arithmetical processes beyond a moderate limit of accuracy. . . ." "In solving similar problems in class, students waste time and incur the risk of greater errors than they avoid, by aiming at a degree of accuracy which, from the nature of the problem, is unattainable." The tables are well arranged, clearly printed, and bound in a flexible linen cover.

Mathematical Papers for admission into the Royal Military Academy and the Royal Military College, for the years 1908-1917. Edited by R. M. MILNE. 6s. 1918. (Macmillan.)

For the sake of those who are not aware of the value of this well-known and compact collection to teachers who may have to prepare candidates for the Army, we may state that Mr. Milne includes in his "editing" the task of supplying full answers to the papers in these volumes. The papers are also published separately.

Annuaire pour l'an 1918. Avec des Notices scientifiques. Pp. 676 +42+44+22+20. 2 frcs. 1918. (Gauthier-Villars.)

All these *Annuaires* now have in the first place four chapters on the Calendar, the Earth, Astronomy, Legal Measures, Money and Legal Time. The fifth chapter contains, in years ending in an even number, Physical and Chemical Data and, in the odd years, Data for Geography, Statistics of Demography, tables of interest, annuities, etc. Certain further changes have been made in the present volume, and these are catalogued on pp. vi and vii. It will be noticed that the bulk of this annual is such as to justify our still calling it the cheapest book in the world. The "Notices" include an essay on the Life and Work of Gaston Darboux from the sympathetic pen of E. Picard, with a portrait of the great mathematician. M. G. Bigourdan writes an interesting account of the Egyptian Calendar. This will be found of historical value to those who are attracted by problems of ancient chronology. M. J. Renaud writes on Time at Sea, a problem that concerns not only those who go down into the great deep in ships, but Science in general, and Meteorology in particular. It concludes with the latest official circulars on the subject, and an account of the decisions arrived at in the London Conference of last July, 1917. M. Hamy sketches the trend of modern views as to the relations existing between the Sun and Terrestrial Magnetism. Special mention may be made of the Index of nearly 60 pages.